

REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. § 1.116 and in light of the remarks which follow are respectfully requested.

Claims 1-6, 8-12, 14-17 are currently pending in the application and are under consideration, as claims 7, 13, and 18 have been previously canceled.

By the above amendments, claims 9 and 14 have been revised in the same manner that claim 1 had previously been amended and considered by the Examiner. Thus, it is submitted that no new matter or new issues requiring further consideration have been raised. Accordingly, entry thereof is respectfully requested.

The Specification stands objected to under 35 U.S.C. §132(a) as allegedly introducing new matter for the reasons set forth at page 2 of the Official Action. This rejection is traversed for the following reasons.

Applicants have inserted language relating to frusta-conically configured surface of the target being at least about fifty percent. In this regard, the Figures unequivocally form part of the Specification as originally filed. As shown in Figure 4, of Applicants' Specification, the sloped region of the front surface exceeds the flat portion. Thus, clearly the frusta-conical portion is at least fifty percent.

By comparison, in rejecting the present claims the Examiner asserts that figures of the applied document Bilz allegedly disclose a frusta-conical configuration of the target being at least fifty percent. Therefore, it is inconsistent on the one hand to object to drawings which are described in Applicants' Specification, while on the other hand rely on the prior art drawings as allegedly being sufficiently descriptive to reject the claims. Thus, for the foregoing reasons withdrawal of this rejection is in order and it is respectfully requested.

Turning to the "prior art" rejection, claims 1-6, 8-12 and 14-17 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hunt et al '405 (U.S. Patent No. 6,599,405 B2) in view of Hunt et al '367 (U.S. Patent No. 5,674,367) and Bilz (German Patent Document 1 50 482). This rejection is traversed for the following reasons.

The present invention relates to the field of recessed sputter targets and particularly to a method of manufacturing recessed sputter targets.

Hunt et al '405 is directed to a method of manufacturing a sputter target assembly and to a target assembly. See the claims. As noted by the Examiner, Hunt et al '405 simply does not disclose or fairly suggest a frusta-conically shaped target surface protruding above the planar top surface of the backing plate.

Hunt et al '367 is directed to an apparatus for sputtering thin films onto a substrate, and more particularly, to a sputtering target having a mounted ring which is shrink fit onto the sputtering target. See col. 1, lines 5-10. Hunt et al '367, has been relied on for the alleged disclosure shown in Fig. 7 to cure the deficiencies in Hunt et al '405.

While Hunt et al '367 discloses that side wall 37 of target 38 is tapered, it is designed to increase the integrity of the target rather than extend the life of the target. Moreover, it must be emphasized that in Hunt et al '367 it is not the sputtering surface 40 which is tapered, but the side wall 37. In stark contrast, in the present invention material is added to the front surface of the target, rather than tapering the side walls. In addition, the material is added in a frusta-conical configuration to the front surface of the target, over at least about fifty percent of the front surface of target, so as to extend the target life. These features and benefits are not even remotely suggested by Hunt et al '367.

Bilz is directed to a magnetron with a cathode, wherein the cathode is provided with a surface which slopes downward toward the periphery. See English Abstract. Bilz has been applied for the alleged disclosure of a frusta-conically configured front (i.e., sputter surface) target. It appears that the Examiner has picked one isolated feature of Bilz and combined it with Hunt et al '367 and Hunt et al '405 to arrive at the claimed invention. This position is improper for a number of reasons. First, Bilz does not even concern the manufacturing of a sputter assembly, where the target is affixed into a backing plate. Second, Bilz does not disclose the claimed process of hot pressing a target insert into the backing plate to a state of plastic deformation so as to diffusion bond these elements. Third, Bilz does not concern the thickness of the target assembly, but rather the uniformity of the film applied on the substrate. As discussed above, Bilz does not even appear to teach a backing plate, much less

the process of manufacturing presently claimed. Thus, absent improper hindsight gleaned from Applicants' own Specification there would be absolutely no motivation to pick this isolated feature in Bilz and combine it with Hunt et al in an effort to arrive at the claimed invention. Accordingly, withdrawal of this rejection is in order and it is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

If the Examiner has any questions or concerns regarding this Amendment or the application in general, he is invited to contact the undersigned at his earliest convenience.

Respectfully submitted,

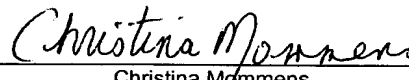


Iurie A. Schwartz
Attorney for Applicants
Reg. No. 43,909

Praxair, Inc.
Corporate Law Department
39 Old Ridgebury Road
Danbury, CT 06810-5113
Phone: (203) 837-2115
Date: March 2, 2007

CERTIFICATE OF MAILING UNDER 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 2, 2007.

Signature: 
Christina Mommens